TITLE 61
LEGISLATIVE RULE
WEST VIRGINIA DEPARTMENT OF AGRICULTURE

SERIES 6B
PRIMARY AND SECONDARY CONTAINMENT OF FERTILIZERS

'61-6B-1. General.

1.1. Scope. -- These rules establish primary and secondary containment standards for fertilizers for the purpose of protecting the groundwater resources of the state of West Virginia.

1.2. Authority. -- W. Va. Code '22-12-5(c).

1.3. Filing Date. -- June 24,1993.

1.4. Effective Date. -- July 1, 1993.

1.5. This is a new legislative rule.

'61-6B-2. Definitions.

2.1. "Abandoned container" means a storage container or other container used at a storage facility to hold fluid bulk fertilizer or fertilizer rinsate that has been out of service for more than six (6) months because of a weakness or leak, or has been out of service for any reason for more than two (2) years and no integrity test has been performed.

2.2. "Approved" means approval by the commissioner except where otherwise stated.

2.3. "Aqua ammonia" means an aqueous solution of anhydrous ammonia generally containing from eighteen (18%) to thirty (30%) percent of ammonia (NH_3) by weight and having a vapor pressure usually varying from 0 to 10 psig at 104 degrees F.

2.4. "Commissioner" means the Commissioner of the West Virginia Department of Agriculture or his appointed agent.

2.5. "Discharge" means a release outside the secondary containment area of fluid fertilizer in a quantity exceeding fifty-five (55) U.S. gallons and/or of dry bulk fertilizer in a quantity exceeding two hundred (200) pounds, unless otherwise specified in The Superfund Amendments and Reauthorization Act (SARA), 42 U.S.C. 9601, Title III Emergency Planning and Community Right-to-Know provisions. The term discharge does not include the normal loading and transportation of fertilizers from the facility or the lawful distribution use, disposal or application of fertilizers.

2.6. "Dry bulk fertilizer" means nonfluid fertilizer in nonpackaged form.

2.7. "Elephant ring" means a storage container with open top serving as a secondary containment vessel into which a smaller primary storage container(s) is placed.

2.8. "Fertilizer" means any substance containing one or more recognized plant nutrients which is used for

its plant nutrient content and which is designed for use or claimed to have value in promoting plant growth, except unmanipulated animal and vegetable manures, marl, lime, limestone, wood ashes, gypsum and other products exempted by regulation of the commissioner.

2.9. "Field operations" means the application of fertilizer to soil or plants in the course of normal agricultural or horticultural practice.

2.10. "Fluid bulk fertilizer" means fluid fertilizer in an undivided quantity exceeding fifty-five (55) gallons.

2.11. "Fluid fertilizer" means fertilizer in fluid form, and includes solutions, emulsions,

suspensions and slurries. "Fluid fertilizer" does not include anhydrous ammonia.

2.12. "Load or loading" means the transfer of bulk fertilizer from the storage facility to transport vehicles, application equipment, or mobile containers, unless the use of the word in the context means otherwise.

2.13. "Low pressure nitrogen solutions" means an aqueous solution of ammonium nitrate and/or urea and/or other nitrogen carriers, containing various quantities of free ammonia exceeding two percent (2%) by weight. Aqua ammonia and non-pressure nitrogen solutions commonly referred to as twenty-eight (28%),thirty (30%), or thirty-two (32%) percent nitrogen solutions are excluded from this definition.

2.14. "Operational area" means an area or areas at a fertilizer storage facility where fertilizers are transferred, loaded, unloaded, mixed, or where fertilizers are cleaned or washed from application equipment, storage containers, or transportation equipment.

2.15. "Operational area containment" means any structure or system designed and constructed to intercept and contain operational spills, including container or equipment wash water and rainwater, and to prevent runoff or leaching from a storage facility.

2.16. "Operator" means any person who is responsible for the transferring, loading, unloading, mixing and/or storing of fertilizers and may include an owner, operator or manager.

2.17. "Person" means an individual, partnership, association, firm or corporation.

2.18. "Primary containment" means the storage of fluid or dry bulk fertilizer in storage containers at a storage facility.

2.19. "Roofed" means protected from precipitation and any subsequent drainage.

2.20. "Secondary containment" means any structure used to contain product spills from primary storage containers and prevent runoff or leaching.

2.21. "Storage container" means:

2.21.1. a container used for the storage of fluid or dry bulk fertilizer; or

2.21.2. a rail car, nurse tank, or other mobile container used for the storage of fluid bulk or dry fertilizer; but does not include

a. a mobile container storing fluid bulk or dry fertilizer at a storage facility for less than fifteen (15) days, if this storage is incidental to the loading or unloading of a storage container at the storage facility,

b. a mobile container located on property not owned, operated or controlled by an operator of a storage facility, nor

c. a container used solely for short-term emergency storage of leaking fertilizer containers.

2.22. "Storage facility" means a location at which fluid bulk fertilizer in undivided quantities in excess of five thousand (5,000) U.S. gallons or dry bulk fertilizer in undivided quantities exceeding twenty five (25) tons is held in storage where the total quantity of the product at the firm may be divided into more than one storage container and still be considered "undivided"; and where that storage occurs for more than a total of

thirty (30) days during a twelve (12) month period.

2.23. "Unload or unloading" means the transfer of bulk fertilizer in an unaltered state from the transport vehicle to the storage facility.

'61-6B-3. General program and policy.

3.1. Every operator of a storage facility should utilize the services of a competent engineer for planning any construction or alterations to their operational area and that the publications "Environmental Handbook for Fertilizer and Agrichemical Dealers" published by the Tennessee Valley Authority, TVA Technical Library, P.O.Box 1010, Muscle Shoals, AL 35660-1010 and "Designing Facilities for Pesticide and Fertilizer Containment" published by Midwest Plan Service, 122 Davidson Hall, Iowa State University, Ames, Iowa 50011-3080 be used to assist in the development of the planning and construction of operational areas.

3.2. Every operator of a storage facility should remove or mitigate existing contamination under the site of the proposed operational area that has the potential to contaminate groundwater prior to any construction or alteration to the operational area.

3.3. The operator shall be responsible for maintenance of the operational area to comply with these rules and in a manner adequate to minimize the risk of a discharge.

'61-6B-4. Powers and duties of the commissioner.

4.1. The commissioner:

4.1.1. may enter and inspect, during reasonable hours, any location where fertilizers are, or may be, stored in such quantities so as to come under these rules;

4.1.2. may take samples to determine compliance with these rules;

4.1.3. shall review design plans where appropriate to determine compliance with these rules;

4.1.4. may audit records of shipments of fertilizers, inspections, and maintenance;

4.1.5. shall promote the protection of groundwater through educational programs for operators;

4.1.6. shall collect and expend monies under the terms of this rule;

4.1.7. shall issue permits or deny permit applications;

4.1.8. may conduct hearings, assess civil administrative penalties, seek injunctive relief or issue orders in accordance with W. Va. Code '22-12-10.

4.1.9. shall promulgate additional regulations as necessary to protect groundwater within the statutory mandates that may include but not limited to licensing and certification, operational management, closure, remediation and monitoring for water quality.

'61-6B-5. Permits and Design Plans.

5.1. All operators of a storage facility shall obtain and post a valid Fertilizer Storage Facility Permit

prominently at the local office of the storage facility. One permit may apply to a storage facility that stores both dry bulk and fluid fertilizer.

5.2. Prior to the construction of primary or secondary storage, all persons shall obtain a Fertilizer Storage Facility Permit from the commissioner. The application shall be made at least thirty (30) days prior to the beginning of construction of the facility for firms that are not in operation on the effective date of this rule or within six (6) months of the effective date of this rule for any person operating a storage facility on the effective date of this rule.

5.3 Any person seeking to renew the Fertilizer Storage Facility Permit shall apply for a renewal within fifteen (15) days of the expiration date of the permit.

5.4. The commissioner shall furnish application forms containing the following information: the corporate or company name; the location; the mailing address; the phone number; the operator's name; the owner's name; and any other information relevant to the containment of bulk fertilizers.

5.5. The operator or his licensed representative shall sign and date each application under oath.

5.6. The commissioner shall issue a non-transferable Fertilizer Storage Facility Permit to each person meeting the requirements of this section. Each permit shall expire on June 30 following the date of issue.

5.7. The commissioner may deny any application for a Fertilizer Storage Facility Permit whenever the permit has been applied for fraudulently, the applicant has grossly interfered with the duties of the commissioner or the applicant is determined to be not in compliance with, or not able to comply with these rules.

5.8. The commissioner may suspend or revoke a Fertilizer Storage Facility Permit whenever the commissioner finds that a hazard to the environment exists, the permit has been obtained fraudulently, the holder has grossly interfered with the duties of the commissioner or the permit holder has been dishonest, deceitful, incompetent or has not complied with or is unable to comply with the provisions of this rule. Any person whose Fertilizer Storage Facility Permit has been suspended or revoked shall immediately discontinue all operations covered under the permit.

5.8.1. The permit holder may resume operations covered by the Fertilizer Storage Facility Permit without reapplication for a permit at the end of the suspension period.

5.8.2. The permit holder must reapply for a permit following a revocation.

5.9. All persons with Fertilizer Storage Facility Permits shall submit design plans and specifications for construction to the commissioner thirty (30) days prior to the start of construction. All persons operating a storage facility on the effective date of this rule shall (within twelve (12) months of the effective date of this rule) submit a description of the current facility and plans to bring the facility into compliance.

5.9.1. The commissioner may allow deviation from these specifications when they are clearly indicated on the design plans and a registered engineer certifies that the design plans and specifications will not reduce the effectiveness of the facility to protect groundwater.

5.9.2. The commissioner shall review all design plans and specifications and notify the person promptly when the plans do not comply with these rules. The review of these plans by the commissioner does not eliminate the responsibility of the operator for constructing and maintaining a facility that will protect the groundwater of this state.

5.10. Any person submitting design plans and specifications shall notify the commissioner promptly of any change to the design plans and specifications before proceeding with construction in accordance with the change.

'61-6B-6. Inspection, Maintenance and Record Keeping Requirements.

6.1. The operator of the storage facility shall inspect the facility frequently enough to minimize the risk of discharge but not less than once a week during operational periods and not less than once a month during non-operational periods. The operator shall make a written record of the inspection made on the day of that inspection. All written records shall be maintained as follows:

6.1.1. a weekly record of the condition of valves for storage containers for fluid fertilizers when the containers are used for storage;

6.1.2. a weekly record of the condition of loading and unloading pads and catch basins during operational periods, or at least monthly during periods of non-use;

6.1.3. a monthly record of the fluid fertilizer levels in each storage container when in use and a comparison of the measured level versus the calculated level based on shipments in and out of the container;

6.1.4. a monthly record of the condition of primary containers and elephant rings;

6.1.5. a semi-annual inventory reconciliation, showing the amount of fluid bulk fertilizer and dry bulk fertilizer from each storage container which is lost or unaccounted for at the end of each semi-annual period; and

6.1.6. other inspection records pertaining to the condition of storage containers, appurtenances, operational area containment, and secondary containment facilities.

6.2. The operator shall take immediate action when inspections determine non-compliance with these rules, or that a greater than minimal risk of a discharge exists. The operator shall create and maintain a written record of any maintenance the same day the maintenance is performed.

6.3. The operator of a storage facility shall maintain the records required by this rule for a minimum of five (5) years at each storage facility or at the nearest local office administering the storage facility. All records required by this rule shall be produced to the commissioner within twenty-four (24) hours of any request.

'61-6B-7. Discharge Response Plan.

7.1. The operator of a storage facility shall prepare a written Discharge Response Plan for the storage facility. The plan shall include:

7.1.1. the identity and telephone number of the persons or agencies who are to be contacted in the event of a discharge, including persons responsible for the stored fertilizer;

7.1.2. for each bulk fertilizer stored at the facility, a complete copy of the labeling required by W. Va. Code '19-15-1 et seq. (except for the net weight);

7.1.3. an identification, by location, of every storage container located at the storage facility, and the type of fertilizer stored in each storage container;

7.1.4. for each type of bulk fertilizer stored at the facility, the procedures to be used in controlling and recovering, or otherwise responding to a discharge; and

7.1.5. procedures to be followed in using or disposing of a recovered discharge.

7.2. The operator shall keep the Discharge Response Plan current at all times.

7.3. The operator shall keep a copy of the Discharge Response Plan readily available at the storage facility or at the nearest local office from which the storage facility is administered, and shall make the plan available for inspection and copying by the commissioner.

7.4. The commissioner shall require the operator of each facility existing on the effective date of this rule complete a Discharge Response Plan within two (2) years of the effective date of this rule.

' 61-6B-8. Storage and Handling of Dry Bulk Fertilizer.

8.1. All dry bulk fertilizer in undivided quantities exceeding twenty-five (25) tons shall be stored inside operational area containment structure(s) consisting of a sound structure or device having a cover or roof top, sidewalls, and a base sufficient to prevent contact with precipitation and surface waters.

8.2. Except for those procedures performed in the field of application, all persons loading, unloading, mixing or handling dry bulk fertilizer shall use a containment method, device, or structure suitable to prevent or minimize groundwater contamination. The containment method, device, or structure shall be of a size and design that contains the fertilizer and minimizes emission of dust and/or vapors beyond the facility boundaries. Any collected material shall be applied at agronomic fertilizer rates or otherwise recycled.

8.3. All operators shall promptly recover any dry bulk fertilizer which is spilled while being loaded to or from storage when the spillage would exceed a quantity greater than two hundred (200) pounds.

8.4. Containment devices, structures, or methods include, but are not limited to:

8.4.1. paving and curbing of outdoor handling areas with materials which allow for collection and recycling of the spilled products;

8.4.2. enclosing conveyors and equipping conveyors with dust control boots. Manually extendible boots may be adaptable to upright and auger type conveyors;

8.4.3. collection and recycling of product dust from rooftops of roof-filled storage structures; or

8.4.4. daily cleanup of the non-roofed areas each day when in use.

8.5. No person may store dry bulk fertilizer without a complete label, as required by W. Va. Code ' 19-15-1 et seq. (except for the net weight) posted on the storage container.

8.6. No person may construct an operational area for dry bulk fertilizer storage in undivided quantities exceeding twenty-five (25) tons closer than one hundred (100) feet from a wellhead, unless that operation is in use on the effective date of this rule.

8.7. No person may store dry bulk fertilizer on land with a reasonable expectation of having a flood event

from a twenty-five (25) year - twenty-four (24) hour frequency storm, as defined by the National Weather Service, during the storage period unless the storage area is adequately protected from inundation by flooding.

8.8. All storage facilities for dry bulk fertilizer operating on the effective date of this rule are permitted five (5) years to fully comply with this rule as long as the operator submits a plan for full compliance with this rule within two (2) years of the effective date of this rule and the operator takes immediate action to prevent groundwater pollution within the capability of the current facility.

' 61-6B-9. Primary Containment: Storage Containers and Appurtenances for Fluid Fertilizer.

9.1. All fluid fertilizer shall be stored in storage containers and appurtenances that are:

9.1.1. constructed, installed and maintained to prevent the discharge of fluid fertilizer;

9.1.2. constructed of materials that are resistant to corrosion, puncture or cracking;

9.1.3. made or repaired with materials that do not react chemically or electrolytically with stored fluid fertilizer in a way which may weaken the storage container or appurtenances, or create a risk of discharge;

9.1.4. made with metals used for valves, fittings and repairs on metal containers that are compatible with the metals used in the construction of the storage container, so that the combination of metals does not cause or increase corrosion which may weaken the storage container or its appurtenances, or create a risk of discharge;

9.1.5. equipped with supports for pipes and fittings that are adequate to prevent sagging and breakage in the ordinary course of operations;

9.1.6. are protected against the risk of damage by trucks and other moving vehicles while loading or unloading fluid bulk fertilizer;

9.1.7. designed to handle all operating stresses including static head, pressure buildup from pumps and compressors, and any other mechanical stresses to which the storage containers and appurtenances may be subject;

9.1.8. anchored to prevent flotation or instability caused by liquid accumulations within a secondary containment facility; and

9.1.9. equipped with a liquid level gauging device which shall be secured in a manner to protect against breakage or vandalism whereby the level of fluid in the storage container can be readily and safely determined;

a. this gauge is not required when the level of fluid in a storage container can be readily and reliably measured by another equally reliable and readily accessible means;

b. this gauge may be an external sight gauge only when the gauge is securely attached against the container wall and provided with a manually operated shut off valve which is locked in the shut off position when the level of fluid is not being determined.

9.2. No person may store fluid fertilizer in an underground or lined pit storage container, except for:

9.2.1. a watertight catch basin used for the temporary collection of runoff or rinsate from transfer,

loading and unloading areas, and expeditiously emptied following use;or

9.2.2. a 316 or 317 stainless steel storage container; or

9.2.3. in another container approved by the commissioner prior to it's initial use, if the storage container is enclosed within an approved liner and an approved program of groundwater monitoring to detect leakage is established.

9.3. No person may store fertilizer in storage containers and appurtenances

9.3.1. that are constructed of copper, brass, zinc, or copper base alloys;

9.3.2. used for the storage of fluid fertilizers containing phosphates (>0.1%) or chlorides that are constructed of aluminum or aluminum alloys;

9.3.3. used for the storage of low ph (<5) fluid fertilizers that are constructed of ferrous materials other than stainless steel except when the materials are coated or treated with protective substances which are adequate to inhibit corrosion;

9.3.4. used for the storage of low pressure nitrogen solutions that are constructed of mild steel, fiberglass, polyolefins or plastic;

9.3.5. used for the storage of phosphoric acid that are constructed of ferrous materials other than 316 or 317 (or superior) stainless steel except when container is lined with a suitable substance to prevent corrosion; or

9.3.6. used for the storage of fluid fertilizers containing potassium chloride (muriate of potash) that are constructed of ferrous materials other than stainless steel, except when:

a. the containers and appurtenances are coated or treated with protective substances that inhibit corrosion; or

b. the container or appurtenance is used for storage periods of not more than six (6) months, is completely emptied between storage periods, and is cleaned and inspected for leaks prior to being refilled for any subsequent period.

9.4. All fluid fertilizers shall be stored such that:

9.4.1. storage containers and appurtenances are fenced or otherwise secured to provide protection from wildlife, vandalism and unauthorized access which may result in a discharge;

9.4.2. valves on storage containers containing fluid fertilizers are locked or otherwise secured except when persons responsible for facility security are present at the facility; and

9.4.3. valves on rail cars, nurse tanks, and other mobile fertilizer containers containing fluid fertilizer parked overnight at a storage facility are locked or secured except when persons responsible for facility security are present at the facility.

9.5. No person may fill storage containers beyond the capacity for which they are designed, taking into account the density of the fluid being stored and thermal expansion during storage.

9.6. No person may store fluid fertilizer in a storage container without a clear and prominent label

identifying the contents of the storage container with the requirements of W. Va. Code '19-15-1 et seq. (except for the net weight).

9.7. No person may store fluid fertilizers on land that has a reasonable expectation of having a flood event resulting from a twenty-five (25) year - twenty-four (24) hour frequency storm, as defined by the National Weather Service, during the storage period unless the storage area is adequately protected from inundation by flooding.

9.8. No person may construct an operational area for fluid fertilizers closer than one hundred (100) feet from a wellhead, unless that operation is in use on the effective date of this rule.

9.9. Any person owning an abandoned underground container, or abandoned underground catch basin shall thoroughly clean and remove it from the ground or thoroughly clean and fill it with an inert solid and shall maintain a permanent record of size, location, and method of closing at the storage facility or at the nearest office from which the storage facility is administered.

9.10. Any person owning an abandoned container or abandoned catch basin, whether underground or not, shall disconnect and seal all connections and vents and secure all hatches and sever and/or seal all valves and connections.

9.11. A secondary containment facility is not abandoned merely because there have been no operational spills into the secondary containment facility.

9.12. All facilities that are in operation on the effective date of this rule shall be permitted three (3) years to fully comply with this section of the rule when the operator submits a plan for full compliance with this section of the rule within two (2) years of the effective date of this rule and the operator takes immediate action to prevent groundwater pollution within the capability of the current facility.

'61-6B-10. Operational Area Containment for Fluid Fertilizer.

10.1. All fluid fertilizer shall be stored such that all loading and unloading of fluid bulk fertilizer shall be on an area which is curbed and paved with asphalt or concrete. The curbed and paved area shall provide an impervious surface and

10.1.1. be of sufficient size to hold the entire mobile container during loading and unloading; and

10.1.2. be designed, constructed and maintained to handle all loading conditions to which it is exposed; and

10.1.3. be maintained by keeping all cracks and seams sealed and be impervious to leakage from any spillage.

10.2. Materials other than asphalt and concrete may be used only after they have been approved by the commissioner.

10.3. This section shall not apply to mobile containers used to nurse field operations when at a field unloading site.

10.4. All operational area containments shall have a curbed and paved surface that drains into a liquid-tight catch basin

10.4.1. that is of adequate design and size to contain a minimum of one thousand five hundred (1,500) gallons of an operational spill when at least one person is available during the entire loading and unloading process that is capable of stopping the loading or unloading process in the case of an operational spill; when no person is available to monitor the loading and unloading, the design and size shall be adequate to contain a total of one hundred ten percent (110%) of the volume of the largest vehicle to be loaded or unloaded; and

10.4.2. which may include a sump and an above-ground container, only when a pump is installed for transfers of the contents into the above-ground container.

10.5. All operators shall promptly recover any operational spill from the operational area containment so that the capacity required in this section is available at all times.

10.6. All operators shall maintain the operational containment area free of debris and foreign matter.

10.7. All facilities that are in operation on the effective date of this rule shall be permitted three (3) years to fully comply with this section of the rule as long as the operator submits a plan for full compliance with this section of the rule within two (2) years of the effective date of this rule and the operator takes immediate action to prevent groundwater pollution within the capability of the current facility.

'61-6B-11. Secondary Containment of Fluid Bulk Fertilizer - Dikes and Elephant Rings.

11.1. All primary storage of fluid bulk fertilizers shall be located within a diked area constructed with a base, perimeter wall and sloped floor drain or within an elephant ring as provided by this section.

11.2. No person may use the diked area for storage of products other than fluid bulk fertilizers and equipment used in the operational area. Adjoining secondary containment areas may share common walls.

11.3. All operators must maintain the minimum capacity requirement at all times. The minimum capacity requirement for the diked area for containment shall contain, below the height of the dike, one hundred twenty-five percent (125%) of the volume of the largest storage container within the diked area plus the submerged portions of all other storage containers, fixtures, and materials in the area. (The minimum capacity when the diked area is covered to prevent the accumulation of rainfall is a capacity equal to 100% of the volume of the largest container.)

11.4. Except where used as a method of monitoring the integrity of a secondary containment system, drainage tile within or underlying the area to be diked shall be eliminated.

11.5. All dikes providing secondary containment shall meet the following requirements:

11.5.1. the walls of a secondary containment facility shall be constructed of earth, steel, concrete or solid masonry, or other material specifically approved by the commissioner, and be designed to withstand a full hydrostatic head of any discharged fluid and weight load of material used in construction;

11.5.2. cracks and seams shall be sealed to prevent leakage;

11.5.3. walls constructed of earth or other permeable materials shall be lined as provided in this section;

11.5.4. earthen walls shall have a horizontal-to-vertical slope of at least three (3) to one (1), unless a steeper slope is consistent with good engineering practice, and shall be packed and protected from erosion;

11.5.5. the top of earthen walls shall be no less than two and one half (2.5) feet wide;

11.5.6. walls may exceed 6 (six) feet in height above interior grade only when provisions are made for normal access and necessary emergency access to tanks, valves and other equipment, and for safe exit from the secondary containment facility;

11.5.7. walls constructed of concrete or solid masonry shall rest upon a floating base of concrete prepared as in this section or upon suitable concrete footings which extend below the average frost depth to provide structural integrity;

11.5.8. the base of a secondary containment facility, and any earthen walls of the facility shall be lined with asphalt, concrete, an approved synthetic liner, or a clay soil liner designed to limit permeability of the base and walls. Liners shall meet the following requirements.

a. Asphalt or concrete liners shall be designed to withstand any loading conditions, including a full hydrostatic head of discharged fluid and static loads of storage containers, including appurtenances, equipment, and contents. Cracks and seams shall be sealed to prevent leakage.

b. Synthetic liners and installation plans shall be approved by the commissioner. All requests for approval shall include a written confirmation from the manufacturer of suitability including compatibility with the stored materials, and a written estimate of the life of the liner. Synthetic liners shall have a minimum thickness of thirty (30) mils (0.8 millimeters); and shall be installed under the supervision of a qualified representative of the manufacturer or a professional engineer. All field constructed seams shall be tested, and repaired if necessary, in accordance with the manufacturer's recommendations.

c. Soil liners shall be constructed by sealing the surface of the soil, including the berm of an earthen dike with a sealing agent such as sodium bentonite, attapulgite or a similar clay material. The soil

liner shall be constructed in accordance with civil engineering practices, to achieve a coefficient of permeability not to exceed 1.0×10^{-6} cm/sec, with a thickness of not less than six (6) inches. The floor of the containment area within the soil liner shall be protected with a layer of gravel or crushed stone at least six (6) inches thick placed on top of the clay liner.

11.6. A liner need not be installed directly under a storage container having a capacity of one hundred thousand (100,000) U.S. gallons or more which has been constructed on site and put into use prior to the effective date of this rule when an official of the company which owns the storage container certifies in writing to the commissioner that one of the following alternative procedures has been complied with.

11.6.1. Alternative 1: The original bottom of the storage container shall be tested for leaks before the sand layer and second bottom are installed. A second bottom made of steel shall be constructed for the storage container. The second bottom shall be placed over the original bottom and a layer of smooth, fine gravel or coarse sand having a minimum thickness of three (3) inches. The newly constructed bottom shall be tested for leaks before any fluid fertilizer is stored on the newly constructed bottom. A record of all tests shall be filed at the storage facility, or at the nearest local office from which the storage facility is administered.

11.6.2. Alternative 2: The container shall be emptied, cleaned, and tested for leaks. The walls and floor of the container shall be tested to assure that welds and thickness of steel plates are sound and adequate to contain the fertilizers. A record of the inspection, test results, and of any repairs made shall be submitted to the control official and maintained by the operator. The interior floor and wall areas of the container shall be coated with a liner to inhibit corrosion. A record of this procedure shall be submitted to the commissioner and maintained by the operator. A test for leaks and liner deterioration shall be conducted every five (5) years thereafter. A record of the test findings and of indicated repairs and maintenance shall be maintained by the operator.

11.6.3. Alternative 3: Monitoring devices shall be installed in angled borings under each tank. These monitoring devices shall constitute a leak detection system for each tank in advance of the point at which any leak would reach groundwater. The number, length, and depth of each boring shall be determined on the basis of site characteristics. The array of monitoring devices under each tank shall constitute the best practical early warning detection system for tank leakage. Each monitoring plan under this alternative shall be implemented only upon review and approval of the commissioner.

11.7. Rail cars that are periodically moved into and out of the storage facility shall not be required to have secondary containment structures.

11.8. Individual storage containers not exceeding three thousand (3,000) gallons may be contained within an "elephant ring" in lieu of a diked secondary containment area only when:

11.8.1. both the primary storage container and the elephant ring are fabricated of material compatible with each other and with the fertilizer being stored;

11.8.2. provisions are made to prevent corrosion when dissimilar metals are used that may contribute to electrolytic corrosion between the primary storage container and the elephant ring;

11.8.3. the height of the elephant ring wall does not exceed four (4) feet unless provisions are made for escape should flooding occur;

11.8.4. the volume contained within the secondary storage walls of the elephant ring up to the working height of the elephant ring is sufficient to contain a volume fifteen percent (15%) greater than the volume contained in the primary storage container plus the volume displaced by the footings of any equipment (i.e. pumps, meters, etc.) placed within the secondary containment vessel;

11.8.5. the elephant ring is maintained free of leaks and structural defects at all times;

11.8.6. the base is protected from corrosion, both from inside and outside the ring, and is underlain by a concrete pad or with eight (8) inches of compacted gravel beneath four inches of compacted sand, or clay, or as recommended by the manufacturer of the elephant ring and approved by the commissioner;

11.8.7. all piping connections to the primary storage container are made over the wall of the elephant ring and are adequately supported and braced;

11.8.8. there is a sump pump within the elephant ring or an exterior portable pump available for removing operational discharges; and

11.8.9. pumps and other fixtures, if located within the elephant ring containment structure, are placed on an elevated platform above the top of the elephant ring or otherwise protected from flooding.

11.9. All facilities that are in operation on the effective date of this rule shall be permitted three (3) years to fully comply with this section of the rule as long as the operator submits a plan for full compliance with this section of the rule within two (2) years of the effective date of this rule and the operator takes immediate action to prevent groundwater pollution within the capability of the current facility.

'61-6B-12. Drainage from Secondary Containment Areas.

12.1. No person may operate a diked secondary containment area with a relief outlet and valve.

12.2. All diked earthen or prefabricated secondary containment areas shall have a base that slopes to a collecting spot where storm water can be discharged by a manually-operated pump over the berm for use in the blending process or for proper disposal in accordance with local requirements for disposal of storm water.

12.3. All asphalt or concrete lined secondary containment areas shall

12.3.1. have a recessed catch drain running through the center of the base; or

12.3.2. have a sump located within the containment area, that shall have no valve plumbed into the sump unless that sump is a part of a permanent recessed catch drain as specified in this section.

12.4. Storm water or other drainage may be removed from the secondary containment area when it is used for makeup water in fertilizer mixes or disposed of in accordance with local requirements when the water is free of chemical residues that could contaminate groundwater.

12.5. No operator may use a collection tank as a storage area.

12.6. All operators shall remove operational spills from the secondary containment area promptly.

'61-6B-13. Hearings, penalties, orders and injunctive relief.

13.1. The commissioner may conduct hearings, assess civil administrative penalties, seek injunctive relief and issue orders in accordance with W. Va. Code ''22-12-10 and 22-12-11.

'61-6B-14. Special revenue account and Groundwater remediation fund.

14.1. All monies for the purpose of the enforcement and administration of this rule shall come from general revenue funds appropriated by the legislature for that purpose. The net proceeds of civil penalties collected pursuant to W. Va. Code ' 22-12-10a or any civil administrative penalties collected pursuant to W. Va. Code ' 22-12-10c will be deposited in the groundwater remediation fund established in W. Va. Code ' 22-12-1 et seq.